

CLAIMS

1. Probe for providing a fluid connection with the small intestine, preferably for nutriment supply to said intestine, comprising a tube (10) to be inserted into the small intestine via the stomach having proximal and distal open ends (10A, 10B) and having inherent tendency of coiling over a predetermined length at the distal end thereof, and a guide (14) displaceable in the tube from the proximal end thereof for straightening said length in order that it will be straightened during the actual insertion in the stomach, c h a r a c t e r i z e d in that the tube (10) at least in said predetermined portion has a hairy, frosted, rough, ribbed or finned outside surface (16).

2. Probe as in claim 1, c h a r a c t e r i z e d in that an axially extending radially projecting fin (17, 18) is provided on the outside surface of the tube (10) at least along said predetermined length with tendency of coiling.

3. Probe as in claim 2, c h a r a c t e r i z e d in that the fin (17) in the coiled portion formed by said predetermined length is located at the inside of said portion.

4. Probe as in claim 2, c h a r a c t e r i z e d in that the fin (18) in the coiled portion formed by said predetermined length is located at the outside of this portion.

5. Probe as in claim 2, c h a r a c t e r i z e d in that the fin extends helically around the tube (10).

6. Probe as in any of claims 2 to 5, c h a r a c t e r i z e d in that the fin is thin and extendible as well as soft and easily flexible.

7. Probe as in any of claims 1 to 6, c h a r a c t e r i z e d in that the coiled portion formed by said predetermined length comprises 1 to 5 turns and has an outside diameter up to 40 mm.

8. Probe as in any of claims 1 to 7,
c h a r a c t e r i z e d in that a hairy surface on the
tube is provided by electrostatic technique and comprises
short fibres projecting radially from the surface.

5

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference W 3630-001 Sm	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)	
International application No. PCT/SE98/00145	International filing date (day/month/year) 02/02/1998	Priority date (day/month/year) 04/02/1997
International Patent Classification (IPC) or national classification and IPC A61J15/00		
Applicant BENMARK, Stig		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☒ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 02/09/1998	Date of completion of this report 18.02.99
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/SE98/00145

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-7 as originally filed

Claims, No.:

8 as originally filed

1-7 as received on 29/01/1999 with letter of 27/01/1999

Drawings, sheets:

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

see separate sheet

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/SE98/00145

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-8
	No: Claims
Inventive step (IS)	Yes: Claims 1-8
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-8
	No: Claims

2. Citations and explanations

see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

1 Concerning Point I

Claim 8, as received with the letter of 27.1.99, does not to meet the requirements of Rule 41(2) PCT, because there appears not to be any basis for the feature that *the hairy surface on the tube is provided as a velourized surface*. The description of the present application as originally filed only discloses that the invention can be provided with fimbriae-like short hairs at the outside surface (page 5, lines 3-4) and that an electrostatic technique is suited for providing a hairy surface (page 5, lines 11-13). This does not imply that the surface would be velourized. Therefore, the subject-matter of claim 8 is extended beyond the disclosure of the application as originally filed and it is not examined any further. Claim 8 as originally filed is assessed instead for novelty and inventive step.

2 Concerning Point V

- 2.1 **State of the Art:** EP-A-0 278 937 (D1), being considered as the closest prior art, discloses the features in the preamble of claim 1. The difference between the subject-matter of claim 1 and D1 is the features in the characterising portion of claim 1.

Technical Problem: Improving the self-feeding characteristics of the catheter into the intestine by increasing the friction and preventing the catheter from migrating from a predetermined position in the intestine.

Solution: Providing the catheter with at a hairy, frosted, rough, ribbed or finned outside surface on at least the predetermined coiled portion.

Argumentation: No indication for the above mentioned solution appears to be found from the documents cited in the International Search Report and in the description. US-A-5 059 169 (D2) discloses a urethral stent with a rough or hairy surface for preventing the stent from migrating from the bladder. Considering D1 as the closest prior art, it appears that the skilled person would not consider D2, because the function of the rough surface is to keep the stent in the predetermined position in the urethra when substantially all the outer surface of the stent is in engagement with

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/SE98/00145

tissue. The skilled person would not be led to use the feature of rough surface for improving the self-feeding of a catheter into the intestine and inhibiting the migration of the coiled portion from the desired location. Thus, claim 1 appears to fulfil the requirements of Articles 33(2) and (3) PCT.

2.2 The dependent claims 2-8 are concerned with developments of the invention according to claim 1, and consequently they appear to fulfil the requirements of Articles 33(2) and (3) PCT as well.

2.3 Industrial applicability is self-evident.

3 Concerning Point VI

Certain published documents (Rule 70.10)

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
US-A-5 601 537	11/02/97	05/06/95	

4 Concerning Point VIII

Claim 8 as originally filed does not meet the requirements of Article 6 PCT, because it is unclear what kind of features of the hairy surface are defined by defining the method of providing the hairy surface.

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2. Catheter as in claim 1, **c h a r a c t e r i z e d** in that an axially extending radially projecting fin (17, 18) is provided on the outside surface of the tube (10) at least along said predetermined length with tendency of coiling.

3. Catheter as in claim 2, **c h a r a c t e r i z e d** in that the fin (17) in the coiled portion formed by said predetermined length is located at the inside of said portion.

4. Catheter as in claim 2, **c h a r a c t e r i z e d** in that the fin (18) in the coiled portion formed by said predetermined length is located at the outside of this portion.

5. Catheter as in claim 2, **c h a r a c t e r i z e d** in that the fin (17, 18) extends helically around the tube (10).

6. Catheter as in any of claims 2 to 5, **c h a r a c t e r i z e d** in that the fin (17, 18) is thin and extendible as well as soft and flexible.

7. Catheter as in any of claims 1 to 6, **c h a r a c t e r i z e d** in that the coiled portion

AMENDED SHEET

formed by said predetermined length comprises 1 to 5 turns and has an outside diameter up to 40 mm.

8. Catheter as in any of claims 1 to 7,
c h a r a c t e r i z e d in that a hairy surface (16) on
5 the tube is provided as a velourized surface.

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